AMENDMENTS TO THE CLAIMS

Please amend the claims of the above-identified application as follows:

Claim 1 (original): A wireless tire pressure sensing system for an aircraft, said system comprising:

dual resonant circuits mounted to a wheel of the aircraft, one resonant circuit comprising: a first variable capacitance sensor for monitoring the pressure of a tire mounted to said wheel; and a first wire loop of a first predetermined inductance coupled to said first variable capacitance sensor, and the other resonant circuit comprising: a second variable capacitance sensor operative as a reference to said first variable capacitance sensor; and a second wire loop of a second predetermined inductance coupled to said second variable capacitance sensor;

an interrogating circuit magnetically coupleable to said dual resonant circuits and operative to induce magnetically a variable frequency current in the dual resonant circuits, said one resonant circuit responding to said induced current with an E-field signal at a first resonant frequency commensurate with the capacitance of said first variable capacitance sensor, and said other resonant circuit responding to said induced current with an E-field signal at a second resonant frequency commensurate with the capacitance of said second variable capacitance sensor;

a receiving circuit E-field coupleable to said dual resonant circuits and operative to receive said E-field signals at said first and second resonant frequencies and to generate first and second signals representative thereof; and

a processing circuit coupled to said receiving circuit for processing said first and second signals to generate a compensated pressure reading of said tire.

Claim 2 (original): The system of claim 1 including a reading unit containing the interrogating circuit, the receiving circuit and the processing circuit, said reading unit including a display coupled to the processing circuit for displaying the compensated pressure reading.

Claim 3 (original): The system of claim 1 wherein the interrogating circuit, the receiving circuit and the processing circuit are disposed on a landing gear to which the aircraft wheel is mounted.

Claim 4 (original): The system of claim 3 wherein the first and second wire loops are mounted in close proximity to each other on a hubcap of the wheel; and wherein the first and second variable capacitance sensors are disposed in a common enclosure which is mounted to the rim of the wheel, the first and second wire loops being coupled through wire conductors to the first and second variable capacitance sensors, respectively, to form the first and second resonant circuits.

Claim 5 (original): The system of claim 4 wherein the common enclosure is pneumatically coupled to a pressure chamber of the tire through a cavity in the wheel rim to enable the first variable capacitance sensor to monitor the tire pressure.

Claim 6 (original): The system of claim 5 wherein the common enclosure includes: an opening in a wall thereof, said opening providing an air passageway solely to the first variable capacitance sensor; and a hollow tube coupled to said wall and enclosing said opening in the hollow portion thereof, said hollow tube disposed in the cavity of the wheel rim.

Claim 7 (original): The system of claim 4 wherein the common enclosure is vacuum sealed.

Claim 8 (original): The system of claim 3 wherein the interrogating circuit comprises: a magnetic interrogator mounted in close proximity to the first and second wire loops of the dual resonant circuits; and an oscillator circuit for driving the magnetic interrogator to generate a variable frequency magnetic field directed toward the first and second wire loops of the resonant circuits.

Claim 9 (original): The system of claim 8 wherein the first and second wire loops are mounted in close proximity to each other on a hubcap of the wheel; wherein the magnetic interrogator is mounted on an axle of the wheel in close proximity to the first and second wire loops; and wherein the oscillator circuit is mounted on a strut of the landing gear and coupled to the magnetic interrogator through wire conductors.

Claim 10 (original): The system of claim 3 wherein the receiving circuit comprises: a third wire loop mounted in close proximity to the first and second wire loops of the dual resonant circuits and operative to receive E-field signals solely within an E-field null of the magnetic coupling of the interrogator circuit, said E-field signals including E-fields at the first and second resonant frequencies; and a sensing circuit coupled to the third wire loop for converting the received E-field signals at the first and second resonant frequencies into the first and second signals representative thereof.

Claim 11 (original): The system of claim 10 wherein the first and second wire loops are mounted in close proximity to each other on a hubcap of the wheel; wherein the third wire loop is mounted on an axle of the wheel in close proximity to the first and second wire loops; wherein the sensing circuit and processing circuit are mounted on a strut of the landing gear; and wherein the sensing circuit is coupled to the third wire loop through wire conductors.

Claim 12 (original): The system of claim 1 wherein the first and second variable capacitance sensors comprise substantially identical integrated circuit structures.

Claim 13 (original): The system of claim 1 wherein the first and second variable capacitance sensors comprise micro-electro-mechanical system (MEMS) sensors.

Claim 14 (original): The system of claim 1 wherein the first and second wire loops are disposed on temperature stable material.

Claim 15 (original): The system of claim 1 wherein the first and second wire loops are disposed on a single layer of temperature stable material.

Claim 16 (original): The system of claim 1 wherein at least one of the first and second wire loops is physically trimable.

Claim 17 (original): The system of claim 1 wherein the processing circuit includes an indicator for displaying a tire pressure condition.

Claim 18 (original): The system of claim 1 wherein the indicator comprises a non-volatile indicator.

Claim 19 (original): The system of claim 1 including a phase lock loop circuit coupled to both of the interrogating circuit and receiving circuit for locking on to the first and second resonant frequencies.

Claim 20 (original): The system of claim 1 wherein the processing circuit generates the compensated pressure reading as a function of the difference of the first and second resonant frequencies.

Claim 21 (original): The system of claim 1 including an aircraft bus; and wherein processing circuit is coupled to the aircraft bus for conducting the compensated pressure reading over the aircraft bus.

Claim 22 (original): The system of claim 21 wherein the interrogating and processing circuits receive power from the aircraft bus.

Claim 23 (original): A method of wirelessly measuring pressure of a tire of an aircraft; said method comprising the steps of:

mounting first and second resonant circuits to a wheel of the aircraft to which the tire is mounted;

monitoring tire pressure with said first resonant circuit;

using said second resonant circuit as a reference to said first resonant circuit;

generating a variable frequency signal;

magnetically coupling the variable frequency signal to the first and second resonant circuits;

inducing first and second resonant frequencies in the first and second resonant circuits, respectively, by the magnetically coupled variable frequency signal, said first resonant frequency representative of an uncompensated pressure reading and said second resonant frequency signal representative of a compensation reading;

E-field coupling the first and second resonant frequencies from the first and second resonant circuits to a receiver circuit; and

generating a compensated pressure reading from the E-field coupled first and second resonant frequencies.

Claim 24 (original): The method of claim 23 including the step of phase locking the variable frequency signal to the E-field coupled first and second resonant frequencies.

Claim 25 (original): The method of claim 24 including the steps of: sweeping the variable frequency signal over a range of frequencies which include the first and second resonant frequencies; determining the variable frequency signal upon phase lock to each of the E-field coupled first and second resonant frequencies.

Claim 26 (original): The method of claim 24 including the steps of: sweeping the variable frequency signal over a range of frequencies which include the first and second resonant frequencies; dwelling the frequency sweep for a period of time at phase lock to each of the E-field coupled first and second resonant frequencies; and determining the first and second resonant frequencies during said dwell periods.

Claim 27 (original): The method of claim 23 including the step of generating a compensated pressure reading as a function of the difference between the E-field coupled first and second resonant frequencies.

Claim 28 (original): The method of claim 23 including the step of conveying the compensated pressure reading over a bus of the aircraft.

Claim 29 (original): The method of claim 23 including the step of displaying a tire pressure condition based on the compensated pressure reading on a non-volatile indicator.

Claim 30 (original): The method of claim 23 wherein the step of using includes using the second resonant circuit as a temperature compensation reference.

Claims 31-37 (cancelled):

Claim 38 (currently amended): A wireless tire pressure sensing system for an aircraft, said system comprising:

a resonant circuit mounted to a wheel of the aircraft, said resonant circuit comprising: a variable capacitance sensor for monitoring the pressure of a tire mounted to said wheel; and a wire loop of a predetermined inductance coupled to said variable capacitance sensor;

an interrogating circuit magnetically coupleable to said resonant circuit and operative to induce magnetically a variable frequency current in the resonant circuit, said resonant circuit responding to said induced current with an E-field signal at a resonant frequency commensurate with the capacitance of said variable capacitance sensor;

a receiving circuit comprising: an E-field antenna E-field coupleable to said resonant circuit and operative to receive E-field signals solely within an E-field null of the magnetic coupling of the interrogating circuit, said E-field signals including the E-field signal at said resonant frequency; and a sensing circuit coupled to the E-field antenna for converting said received resonant frequency E-field signal into a signal representative thereof; and

a processing circuit coupled to said receiving circuit for processing said converted signal to generate a pressure reading of said tire.

Claim 39 (currently amended): The system of claim 38 wherein the E-field antenna comprises: a second wire loop mounted in close proximity to the wire loop of the resonant circuit and operative to receive the E-field signals solely within [[~~an~~]] the E-field null of the magnetic coupling of the interrogator circuit[~~, said E-field signals including E-fields at the resonant frequency~~]; and wherein the sensing circuit is coupled to the second wire loop.

Claim 40 (original): The system of claim 39 wherein the wire loop of the resonant circuit is mounted on a hubcap of the wheel; wherein the second wire loop is mounted on an axle of the wheel in close proximity to the wire loop of the resonant circuit; wherein the sensing circuit and processing circuit are mounted on a strut of the landing gear; and wherein the sensing circuit is coupled to the second wire loop through wire conductors.

Claim 41 (currently amended): A method of wirelessly measuring pressure of a tire of an aircraft; said method comprising the steps of:

mounting a resonant circuit to a wheel of the aircraft to which the tire is mounted;

monitoring tire pressure with said resonant circuit;

generating a variable frequency signal;

magnetically coupling the variable frequency signal to the resonant circuit;

inducing a resonant frequency in the resonant circuit by the magnetically coupled variable frequency signal, said resonant frequency representative of a pressure reading;

E-field coupling the resonant frequency from the resonant circuit to an E-field antenna, said E-field coupling being solely within the E-field null of the magnetic coupling to the resonant circuit; and

generating a pressure reading from the E-field coupled resonant frequency of said E-field antenna.

Claim 42 (original): The method of claim 41 including the step of phase locking the variable frequency signal to the E-field coupled resonant frequency.

Claim 43 (original): The method of claim 42 including the steps of: sweeping the variable frequency signal over a range of frequencies which include the resonant frequency; determining the variable frequency signal upon phase lock to the E-field coupled resonant frequency.

Claim 44 (original): The method of claim 42 including the steps of: sweeping the variable frequency signal over a range of frequencies which include the resonant frequency; dwelling the frequency sweep for a period of time at phase lock to the E-field coupled resonant frequency; and determining the resonant frequency during said dwell period.

Claim 45 (cancelled):

Claim 46 (original): The method of claim 41 including the step of conveying the pressure reading over a bus of the aircraft.

Claim 47 (original): The method of claim 41 including the step of displaying a tire pressure condition based on the pressure reading on a non-volatile indicator.

Claims 48-62 (cancelled):